

Work Order ID 112205

February-13-14 3:00:52 PM

112205

Page 1

Item ID: D3065-3 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Step Spacer
 Start Date: 30/01/2014 Start Qty: 60.00 ***60*** Cust Item ID:
 Required Date: 30/01/2014 Req'd Qty: 60.00 ***60*** Customer:
 Reference:

Approvals: Process Plan: *[Signature]* Date: 14-02-13 Tooling: _____ Date: _____
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
 Run Start ***NR1***
 Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3065	Rev B								

100

100

Waterjet
FLOW CNC Waterjet

FLOW WATER JET

Memo
1-Cut as per Dwg
Rev: _____
Prog Rev: _____

0.00

0.00

ISSUE PO 1023011
POSSIBLE SUPPLIER: LOEBSACK WATERJET

cert

102

102

Small Fab
Small Fab

Memo
DEBURR A/R

0.00

0.00

QC *[Signature]*

DAS
27
11/19/16

cmg 2/12/14

14/4/14 (60)

60
[Signature]

DQA:

Date:

14/05/16

see Supplier NCR 14-3803

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed:

K11

Date:

14/5/15

Work Order update only ☐

Work Order: <u>112205</u>	DISPOSITION Rework <input type="checkbox"/> Scrap <input checked="" type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS			
Part No. <u>D 3065-3</u>		Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>
NCR No. <u>14-3865</u>		Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input checked="" type="checkbox"/>
		Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>
		Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material	14/04/17	102	1	found 1 piece with a defect	DAS 16 9-89	Scrap, destroy	SB 14/07/17	DAS 27 9-89 14/5/15	DAS 16 9-89
Operator				1.250" hole is too small unable to fit plug in it.	AS2042 14/05/15	Non replace			AS2042 14/05/15
Offset/Setup				Re. Supplier issue.		Contact supplier & issue.	M 14/5/15		
Process									
Supplier									
Training									
Transport									
Unapproved						\$6.55			

FAULT CATEGORY

Landing Gear	General		
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Folio/Program	<input type="checkbox"/> Outside Dimensions
<input type="checkbox"/> Centre Not Concentric	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Grain	<input type="checkbox"/> Over/Under tolerance
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damage/Defect	<input type="checkbox"/> Hardware	<input type="checkbox"/> Part Incorrect
<input type="checkbox"/> Crimp/Kink/Ripple/Wave	<input type="checkbox"/> Burrs	<input type="checkbox"/> Inspection Incomplete/Unqualified	<input type="checkbox"/> Part Lost/Missing
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Part Moved
<input type="checkbox"/> Crushing	<input type="checkbox"/> Countersink	<input type="checkbox"/> Misaligned/off center	<input type="checkbox"/> Positioned Wrong
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Power Loss/Surge
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Drawing	<input type="checkbox"/> Misread	<input type="checkbox"/> Pressure/Forced
<input type="checkbox"/> Marks/Chatter	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Off-set	<input type="checkbox"/> Set-up
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Calibration	<input type="checkbox"/> Temperature/Cure
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Fit/Function	<input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Weld
			<input type="checkbox"/> Wrong Stock Pulled
			<input type="checkbox"/> Other

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1 12205

Page 2

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

60

60

Customer:

Reference:

Run Start *NR1*

Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

**Insp.
Stamp**

0.00

104

Brake NC

Memo

0.00

Brake NC

D3065

DAS
27

106

QC5- Inspect part completeness to step on W/O

0.00

106

QC

Memo

0.00

Quality Control

DAS
27

108

Chemical Conversion Coat per QSI005 4.1

0.00

108

HandFinish

Memo

0.00

Hand Finishing

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
		<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

Work Order ID 112205

112205

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Item ID: D3065-3	Accept	*N900040100*	Setup	Start	*NS1*
Revision ID:				Stop	*NS2*
Item Name: Step Spacer					
Start Date: 30/01/2014	Start Qty: 60.00	*60*	Cust Item ID:		
Required Date: 30/01/2014	Req'd Qty: 60.00	*60*	Customer:		
Reference:					

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:		Stop	*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp	DAS 36 9-89
110 *110* QC Quality Control	Memo	0.00				59x			14/04/23	
112 *112* Packaging Packaging	Memo	0.00								
115 *115* QC Quality Control	Memo	0.00				S9				

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 112205

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112205

Page 4

Item ID: D3065-3

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Step Spacer

Start Date: 30/01/2014 Start Qty: 60.00

60

Cust Item ID:

Required Date: 30/01/2014 Req'd Qty: 60.00

60

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

Identify as per dwg & Stock Location: C-A

0.00

180

Packaging

Memo

0.00

Packaging

59x

14/04/23

DAS
36
9-89

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.00

Quality Control

14/04/24

14-04-24

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
		<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

Picklist Print

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Page 1

Work Order ID: 112205

112205

Parent Item: D3065-3

D3065-3

Parent Item Name: Step Spacer

Start Date: 30/01/2014

Required Date: 30/01/2014

Start Qty: 60.00

Required Qty: 60.00

Comments: IPP: C02.11.01Incorporated D3066-1 IPPKJ/RF
IPP Rev:D Now on Water Jet 06-04-11 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3065-3P		Purchased		No			Each	0.0000		60			
D3065-3P										**			
Step Spacer													

14/4/14 (60)

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other _____ _____ _____
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DART AEROSPACE LTD		Work Order:	112205
Description: Step Spacer		Part Number:	D3065-3
Inspection Dwg: D3065 Rev: B		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

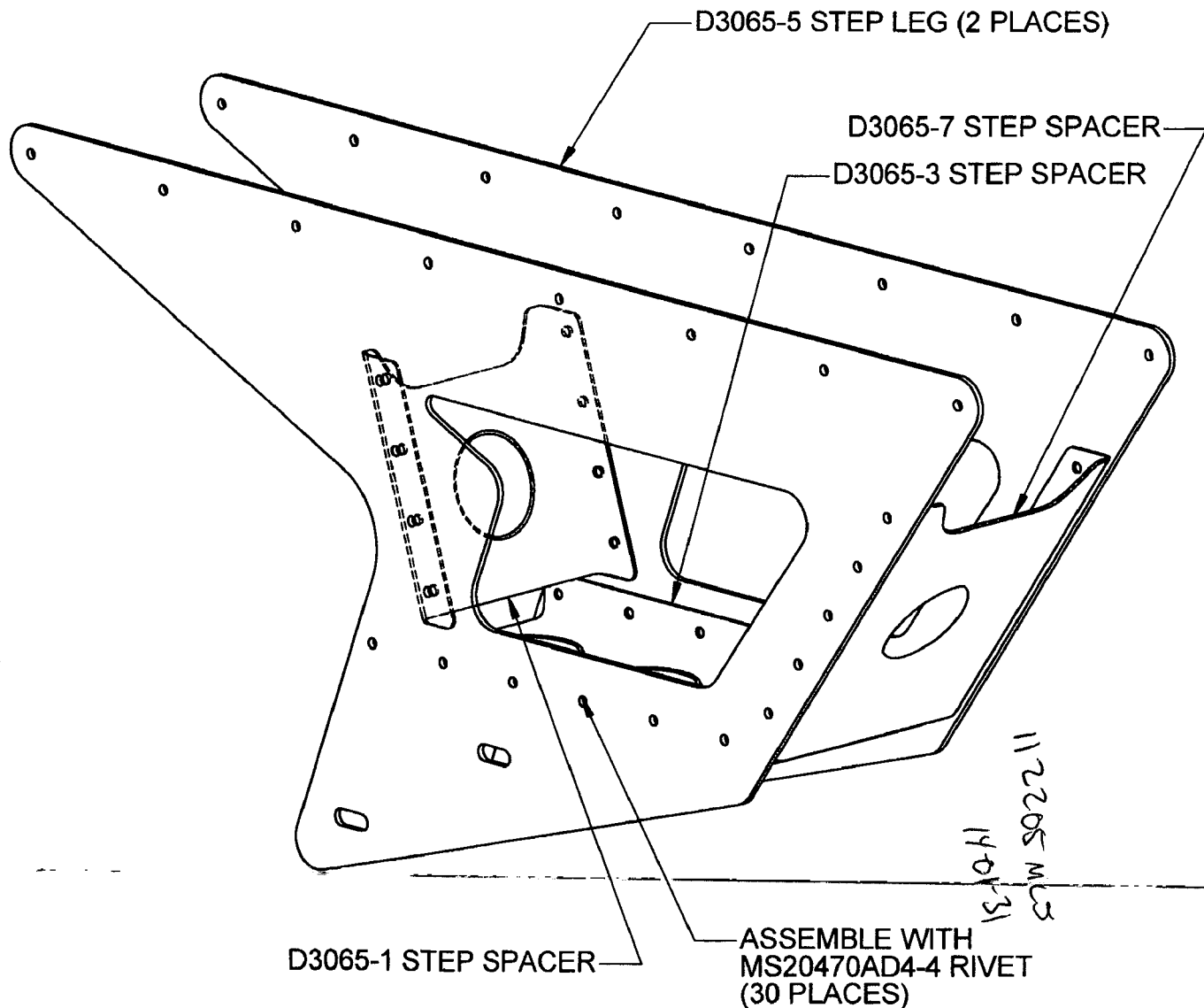
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.260	+/-0.010	1.260	✓		✓ Skm-05	
3.260	+/-0.010	3.260	✓			
5.260	+/-0.010	5.260	✓			
6.520	+/-0.010	6.51	✓			
2.093	+/-0.010	2.093	✓			
3.936	+/-0.010	3.936	✓			
4.186	+/-0.010	4.18	✓			
Ø0.129	+0.005/-0.000	0.137				
Ø1.250	+0.005/-0.000	1.249	✓			
Pitch 1.204	+/-0.005	1.204	✓			
0.040	+/-0.010	0.039	✓			

Measured by: mm	Audited by:	Preliminary Approval:
Date: 14/04/15	Date:	Date:

Rev	Date	Change	Revised by	Approved
A	04.02.25	New Issue P/O D3065-041	KJ/RF	
B	04.08.12	Removed dimension 1.204	KJ/JLM	
C	06.06.23	Dwg Rev. changed	KJ/JLM	
D	07.09.06	0.040 dimension added	KJ/JLM	
E	12.10.10	Ø0.129 was Ø0.128	KJ	

DART

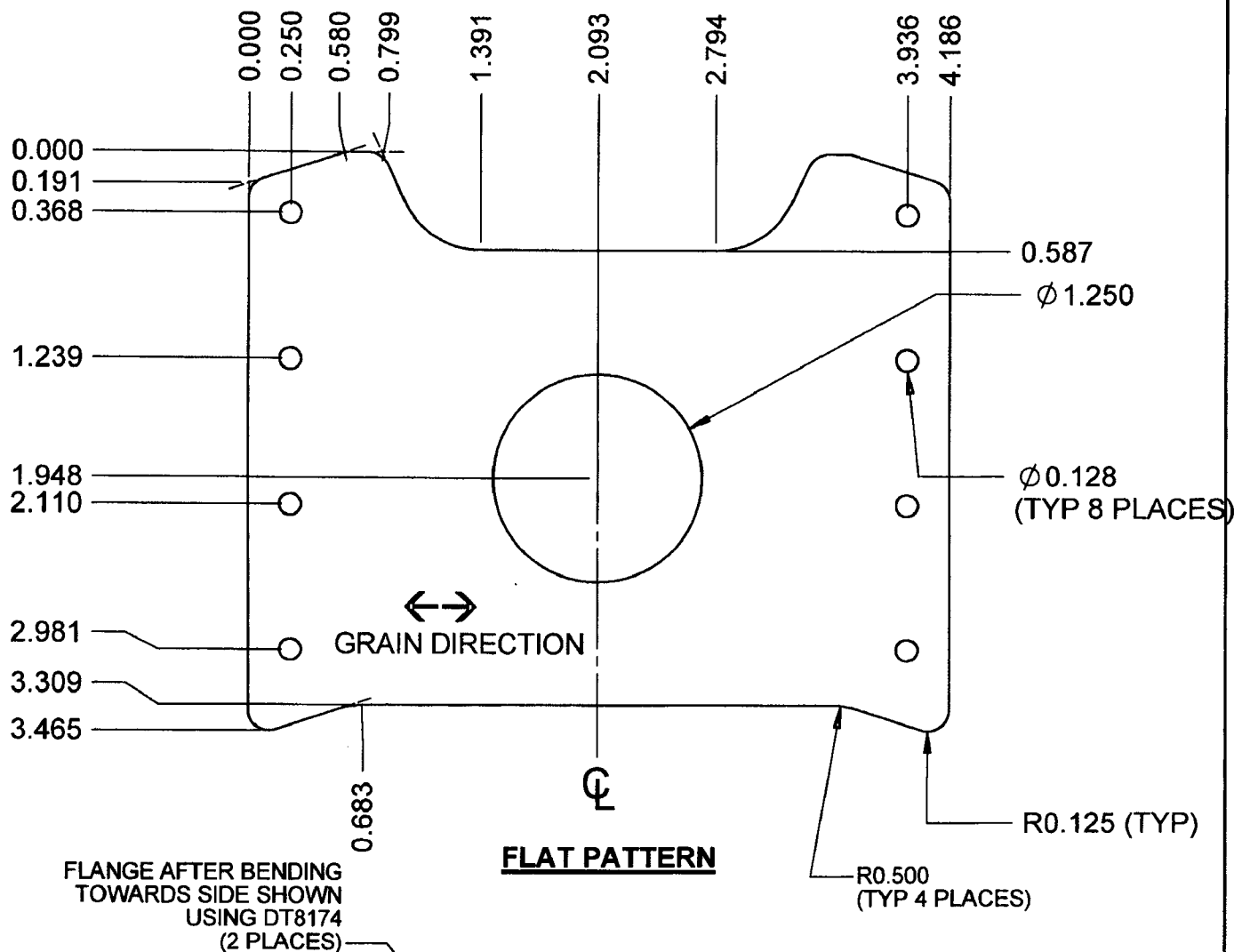
DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3065	REV. B SHEET 1 OF 5
DATE 06.05.23		TITLE STEP LEG ASSEMBLY SCALE 1:2	
A	02.09.11	NEW ISSUE	
B	06.05.23	ADD 6061-T6 MATERIAL, ADD SLOTS TO D3065-5	

RELEASED06.06.20 *[Signature]***D3065-041 STEP LEG ASSEMBLY**

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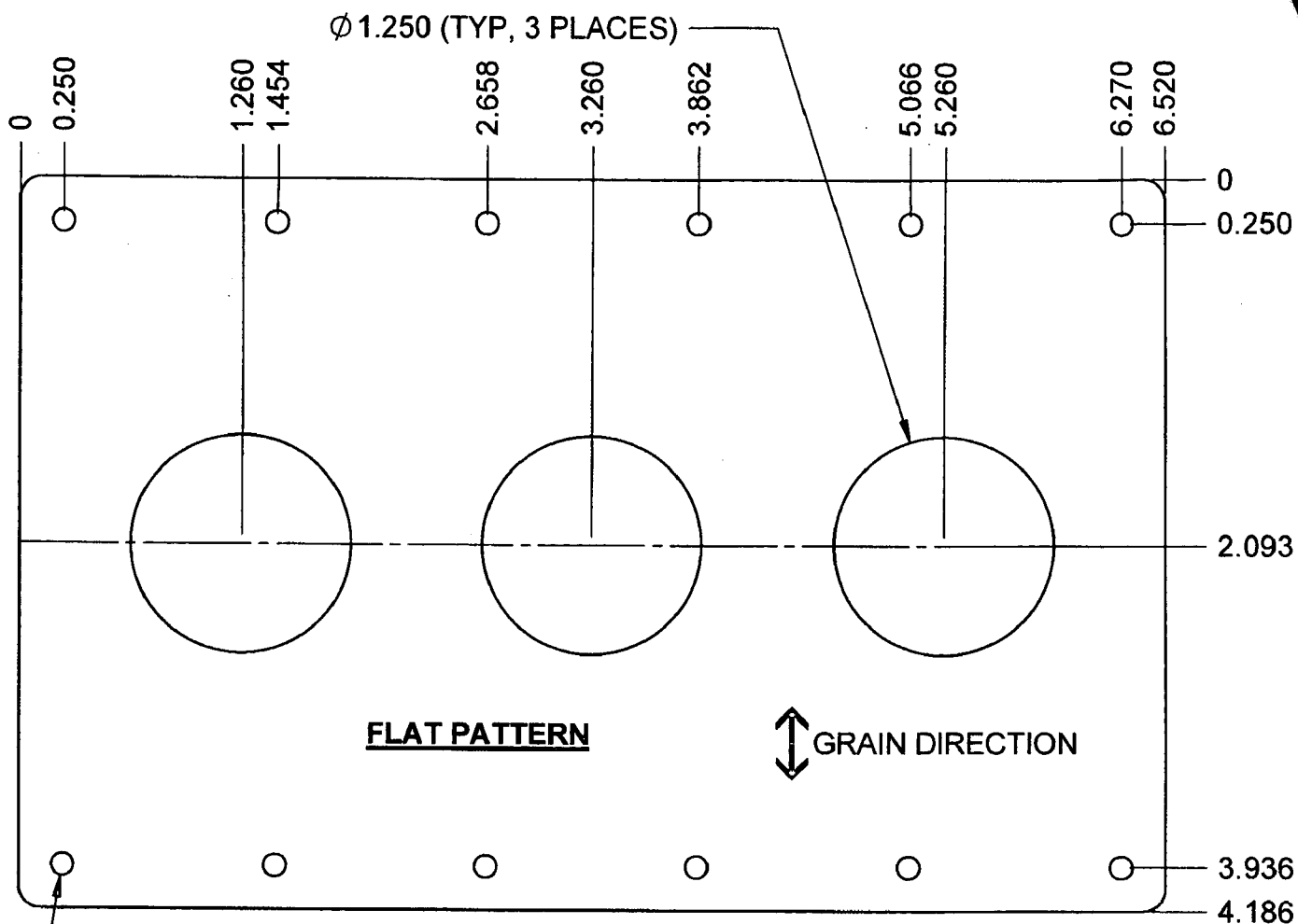
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DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3065	REV. B SHEET 2 OF 5
DATE 06.05.23		TITLE STEP LEG ASSEMBLY	SCALE 1:1





DESIGN <i>UP</i>	DRAWN BY <i>C.B.</i>	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3065
DATE 06.05.23	TITLE STEP LEG ASSEMBLY	SHEET SC

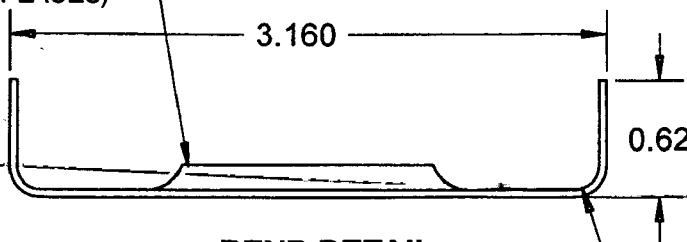


FLANGE AFTER TOWARDS SIDE
SHOWN USING DT8174 (3 PLACES)

Ø0.129 (TYP, 12 PLACES)

RELEASED

06 Oct 20 *[Signature]*



BEND DETAIL

D3065-3 STEP SPACER

- 1) MATERIAL: 2024-T3 (QQ-A-250/4)
0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

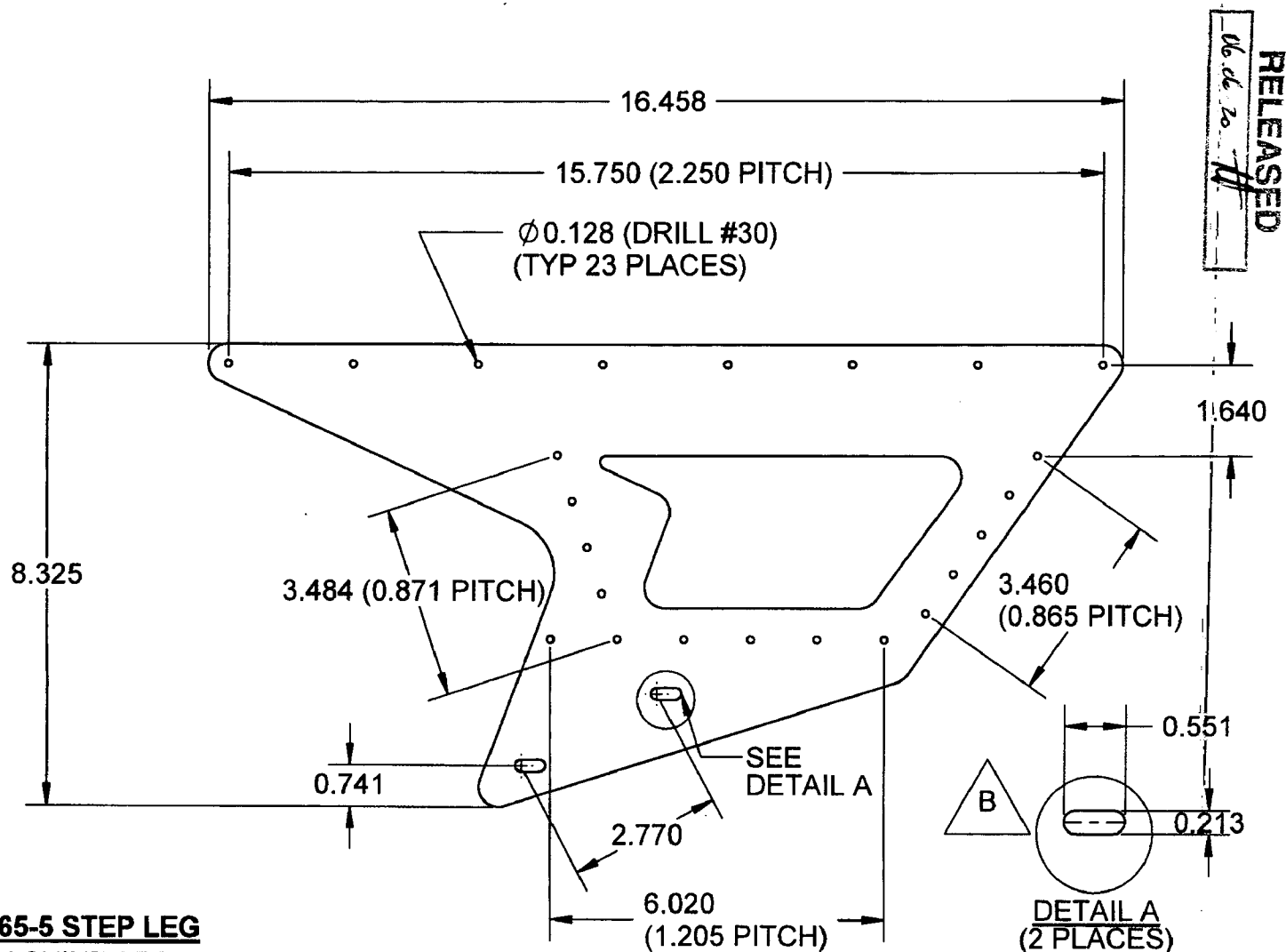
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EV B
OF S
ALE
17

DART

DESIGN	DRAWN BY	DART AEROSPACE LTD
CHECKED	APPROVED	HAWKESBURY, ONTARIO, CANADA
PH	CB	
DATE	DRAWING NO.	REV. B
06.05.23	D3065	SHEET 4 OF 5
	TITLE	SCALE
	STEP LEG ASSEMBLY	1:3



D3065-5 STEP LEG

- 1) MACHINE PER DWG FILE "D3065-5.SLDPRJT"
- 2) MATERIAL: 6061-T6 (PER QQ-A-250/11 OR AMS 4025 OR AMS 4027) 0.080" THICK
(REF DART SPEC M6061T6S.080)
OR
5052-H32 (PER QQ-A-250/8 OR AMS 4016) 0.080 THICK (REF DART SPEC. M5052H32S.080)
- 3) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

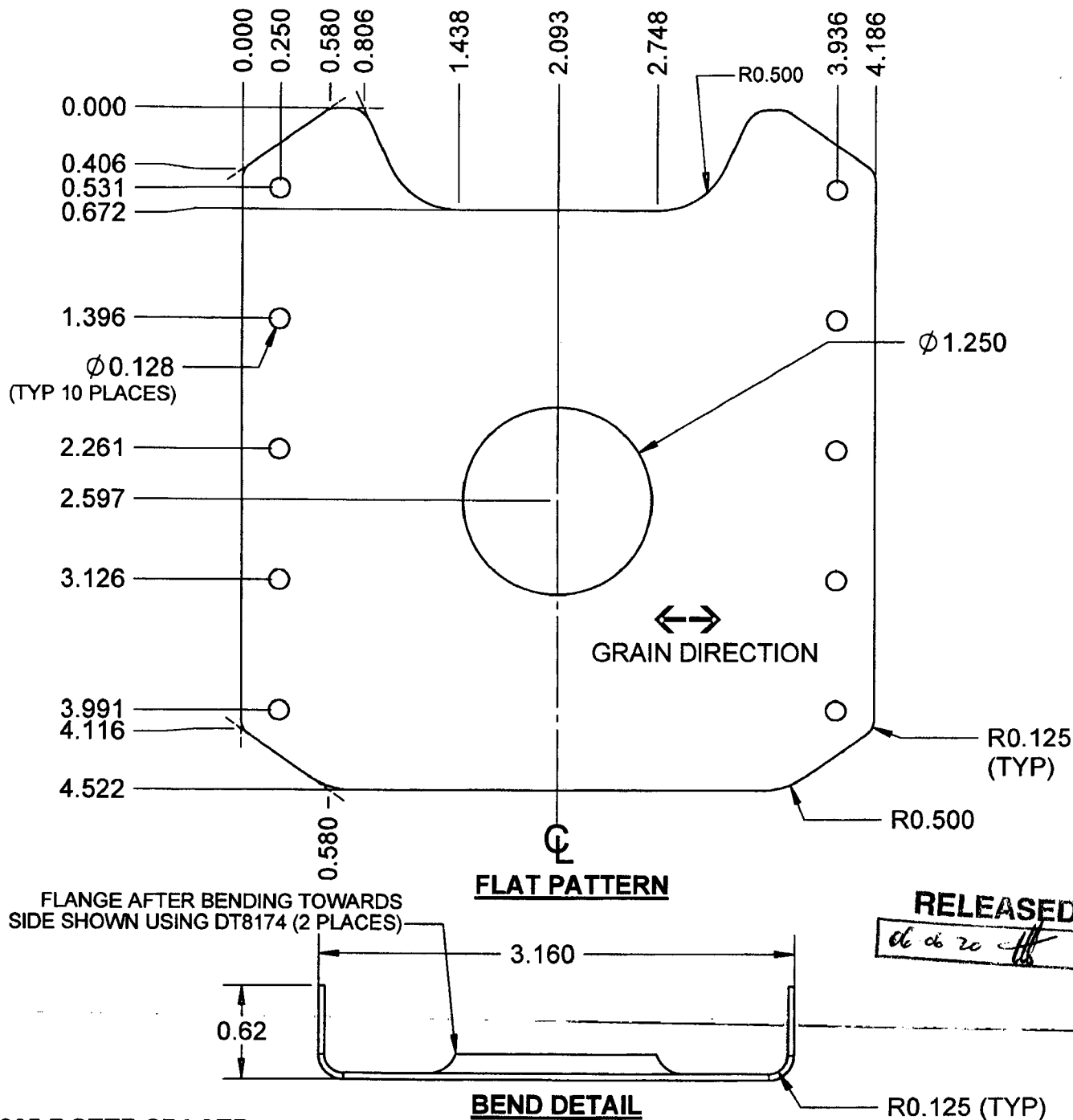
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THIS



DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3065	REV. B SHEET 5 OF 5
DATE 06.05.23	TITLE STEP LEG ASSEMBLY		
			SCALE 1:1



D3065-7 STEP SPACER

- 1) MATERIAL: 2024-T3 (PER QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO23011

Purchase Order Date 2/14/2014

PO Print Date 2/14/2014

Page Number 7 of 9

Order From :

VC-LWC001

Ship To : DART AEROSPACE LTD

LOEBSACK WATERJET CANADA LTD.
55 NORTHFIELD DR. E.
P.O.BOX 339

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

WATERLOO, ONTARIO N2K 3T6

Contact Name

Vendor Phone

Buyer

Michael Gregoire

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Ship To Contact

Ship To Phone

Ship Via:

FedEx PI collect

Ship Acct:

19	D3065-3P	Step Spacer	3/28/2014	60.00	\$7.00	\$420.00
			Yes	Each		
			3/28/2014			

Manufacture as per drawing D3065 rev.b
B112205

	D3065-3P		3/28/2014	40.00	\$7.00	\$280.00
				Each		
			3/28/2014			

Manufacture as per drawing D3065 rev.b
B113019

Line Total: \$700.00

20	D3065-5P	Step Leg	3/28/2014	30.00	\$11.40	\$342.00
			Yes	Each		
			3/28/2014			

Manufacture as per drawing D3065 rev.b
B110750

	D3065-5P		3/28/2014	80.00	\$11.40	\$912.00
				Each		
			3/28/2014			

Manufacture as per drawing D3065 rev.b
B112407

Line Total: \$1,254.00

PO Instructions: PROCUREMENT QUALITY CLAUSES

A005 RIGHT OF ENTRY

A008 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION SENT TO DART AEROSPACE)

A012 CHEMICAL AND PHYSICAL TEST REPORTS

A016 PERSONNEL QUALIFICATION

A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)

A026 CERTIFICATION OF MATERIAL CONFORMANCE

A042 DART NOTIFICATION BY SUPPLIER

Note:

Certificate of Compliance

Sold To: DART Aerospace

Purchase Order Nu ID PO23011

Item	Quantity	Part Number	Revision	Description	Mtl. / Thk.	HT Number
18(4)	60	D3065-1	b	STEP SPACER	2024-T3 / 0.040"	663172A5
19(5)	100	D3065-3	b	STEP SPACER	2024-T3 / 0.040"	663172A5
21(7)	60	D3065-7	b	STEP SPACER	2024-T3 / 0.040"	663172A5
20(6)	110	D3065-5	b	STEP LEG	5052-H32 / 0.080"	3C5291
9(8)	20	D4093-1	d	BRACKET	6061-T6 / 0.750"	37797032
10(9)	10	D4093-3	d	BRACKET	6061-T6 / 0.750"	37797032
8(2)	20	D3319-1	c	WEARPLATE	CRS 18GA / 0.048"	3683T3-51
7(1)	20	D3319-3	c	WEARPLATE	CRS 18GA / 0.048"	3683T3-51
22(3)	120	D3537-1F	c	WEARPAD	304 SS / 0.063"	A1303988
11(10)	40	D3405-1F	b	GHW BRACKET	304 SS / 0.120"	350420

This is to certify that the whole of the supplies detailed hereon has been inspected, tested, packed, and unless otherwise stated, conform in all respects with the requirements of the contract or order.

Name: Derek Loebsack

Title: President

Sign: 

Dated:

07-14-04



THYSSENKRUPP MATERIALS NA

J.M. WOODTURNING LTD

ALUMINUM PLATE 6061-T651
750" THICK X 48.5000" X 96.5000"
PART NO.

PO/Rel FRED

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Signed by: _____

Certificate of Mill Test Results

BL PEC-851084-001

19Nov13

Pg 1/1

TEST CERTIFICATE



Hulamin Limited Reg. No. 19400728 ALOR UAI Reg. No. 4080149804

HEAD OFFICE: No. 15400728 ALOR UAI, P.O. Box 74, Pulau Pinang 12200, Pulau Pinang
Telephone: +27 30 255 6811 Telex: +27 33 394 6335

Certificate No: 1206182682

BUYER: TA CHEN INTERNATIONAL INC 8888 OLBISPO AVE LONG BEACH CA 90803	Hulamin Lot No: HLO18523	Product: PLATE HEAT TREATED L1NISHED, 6061-T651 0.75" X 48.5" X 96.5"
	Lot No: 17/08/032CB	Dimension: 0.75" X 48.5" X 96.5"
	P/Lot No: 2/161413	Alloy - Temper: 6061 - T651
	Release No: RE06058	
	Cust Order No: N03100-S	Certificate No: 1206182682
	HULAMIN Order No: 181742E	Cust Ref/Part No:
	Item Part: 1/1	Combined P/Lot No: R2684

Case No: PFV871

MECHANICAL TEST RESULTS

Lot No.	Cast No.	Metal Id	Alloy	Spec No	Mechanical Properties							
					Yield Strength (Ksi)	UTS (Ksi)	Elongation A50 (%)	Elong (%)	Test Date	Gauge Length (Inches)	Bond Test	Actual Gauge (Inches)
Spec				Min	35.1	42.0	9					0.75
				Max								0.781
17/08/032CB	VAST	37787032	6061	1	41.8	48.7	15		07/08/12	2		0.765
				2	41.6	48.7	15		07/08/12	2		0.765

CHEMICAL COMPOSITION

	Cast No.	Alloy	Si (%)	Fe (%)	Cu (%)	Mn (%)	Mg (%)	Cr (%)	Zn (%)	Ti (%)	Each (%)	Total (%)	Al (%)
Min			0.40		0.15		0.8	0.04					
Max			0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.15	
	VAST	6061	0.60	0.44	0.28	0.11	1.01	0.21	0.01	0.012			97.20

CONFORMS TO: 8082 SB-209 ASTM B209 TO AMS 4027W AMS-00A-702-11, 00.1997

For purposes of determining conformance with these specifications, an observed value or a calculated value shall be rounded "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM Practice E29, for Using Significant Digits in Test Data to Determine Conformance with Specifications.

WE HEREBY CERTIFY, THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE TERMS OF THE ORDER CONTRACT. THE INSPECTION RESULTS INDICATED IN THE CHEMICAL COMPOSITION HAVE BEEN OBTAINED FROM CAST ANALYSIS.

Dr. A. Pechen (HEAD OF CHEMICAL TESTING)

Ver 1.0.1

V. Markov (HEAD OF PHYSICAL TESTING)

MILL TEST REPORT
Customer: CHEN CON COM PO# PEC-253613 SO# PR6430
Item: 7504896061T651 Bundle: PFV871 Heat: 37797032

THIS MTR contains 1 page (Page# 1)

MTR# HLCR161784_PPFV

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Kaiser Aluminum
Trentwood Works
Spokane, WA 99215-5108
(800) 367-2586

CUSTOMER PO NUMBER: 5400197766-20		WORK PACKAGE:	CUSTOMER PART NUMBER: ALFLR01581		PRODUCT DESCRIPTION: HT Flat Sheet	
KAISER ORDER NUMBER: 1160889	LINE ITEM: 2	SHIP DATE: 11/14/2013	ALLOY: 2024	CLAD: BARE	TEMPER: T3	
WEIGHT SHIPPED: 3293 LB	QUANTITY: 117 PCS EST.	B/L NUMBER: 2044959	GAUGE: 0.0400 IN	WIDTH: 48.000 IN	LENGTH: 144.000 IN	
SHIP TO: COPPER & BRASS SALES 404 CENTURA COURT SPARTANBURG, SC 29303 US			SOLD TO: COPPER & BRASS SALES ATTN: ACCOUNTS PAYABLE P.O. Box 5116 SOUTHFIELD, MI 48086 US			

MHU 1730227: LOT 663172A5: 117 pieces

Certified Specifications

AMS 4037/RevP AMS-QQ-A-250/4/RevA ASTM B 209/Rev10 CMMP 019/RevD CMMP 025/RevU

Test Code: 1504

Test Results:

LOT: 663172A5 CAST: 641 DROP: 27 INGOT: 3

Melted in USA
(ASTM E8/B557)
(EN 2002-1)

Tensile: Temper	Dir/#Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
T3	LT / 02 (Min:Max)	68.1 : 68.2 (470 : 470)	46.0 : 46.1 (317 : 318)	17.1 : 17.8

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.23	4.7	0.57	1.3	0.01	0.16	0.02	0.01	0.00	TOT 0.03

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
2024	MIN 0.00	0.00	3.8	0.30	1.2	0.00	0.00	0.00	0.00	0.00	MAX 0.05
	MAX 0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.05	TOT 0.15

Aluminum Remainder

Plant Serial: 4315340

Kaiser Order Number: 1160889

Line Item: 2

Page 1 of 2

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402984673

CstAr

CstOr 256039

Wgt.: 55.296 LB

Date 02/20/2014

John R. Zambetti

KAISER
ALUMINUM
FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Kaiser Aluminum
Trentwood Works
Spokane, WA 99215-5108
(800) 367-2586

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.8/2-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminum Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law. ISO-9001:2000 certified.

JAMES HEMENWAY, LABORATORIES SUPERVISOR

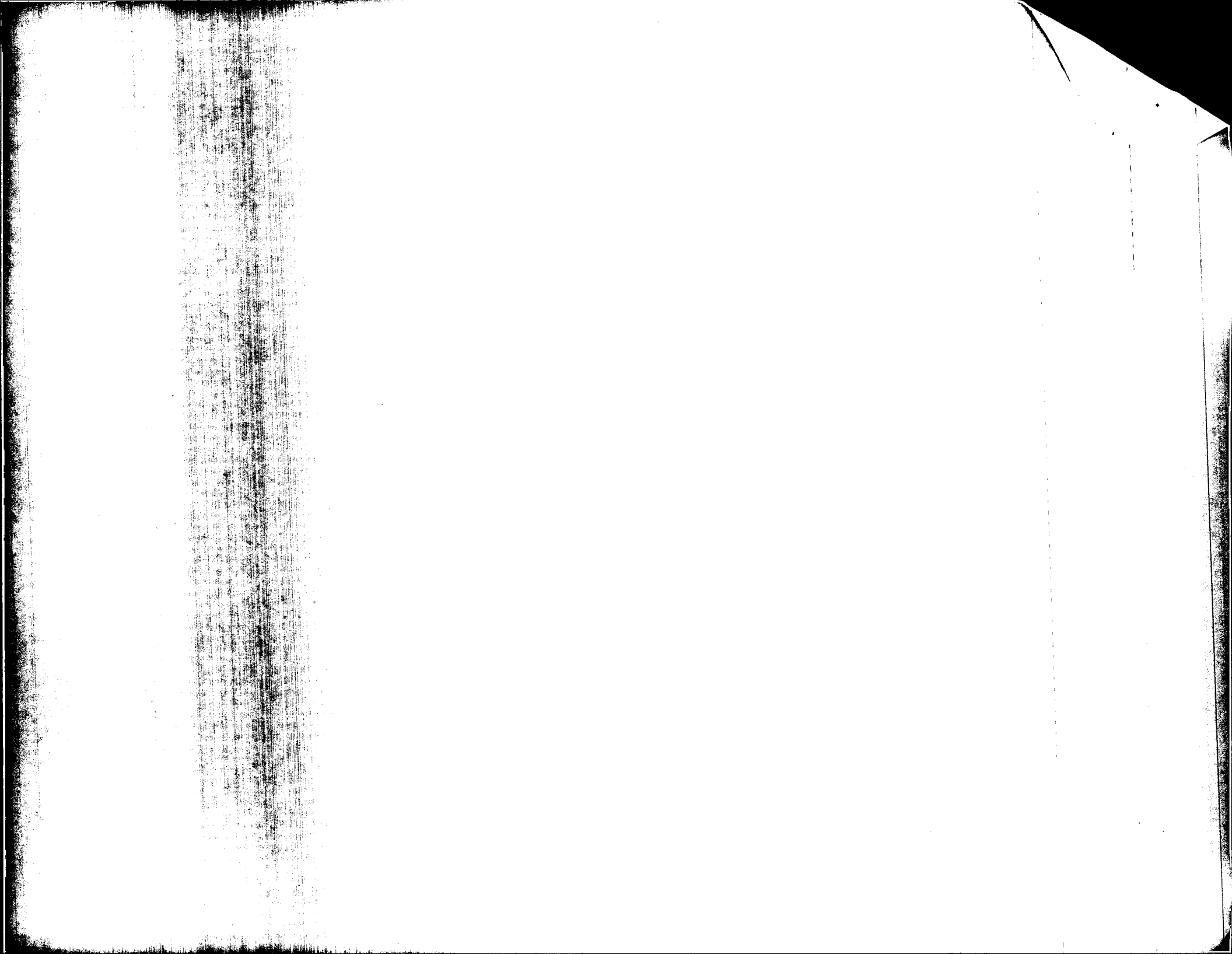
James Hemenway

Plant Serial: 4315340
Kaiser Order Number: 1160889
Line Item: 2

Page 2 of 2

From: ThyssenKrupp Materials NA
Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402984673
CstAr CstOr 256039
Wgt.: 55.296 LB Date 02/20/2014

John R. Zambetti



FORM: 1006

WORKORDER:

2402984673

COPPER AND BRASS SALES

MATERIAL TYPE

ALUMINIUM ALLOYS

PRODUCT DESIGNATION

2014 2024 2224 2324 7050 7075 7150 7175 7475 ALUMEC 89 ALUMEC 99 QC-7

"WARNING"

SMALL CHIPS, FINE TURNINGS AND DUST MAY IGNITE READILY. EXPLOSION POTENTIAL MAY BE PRESENT WHEN DUST OR FINES ARE DISPERSED IN THE AIR; FINE, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH CERTAIN METAL OXIDES; OR, CHIPS, FINES, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH WATER OR MOISTURE. KEEP AWAY FROM IGNITION SOURCE. USE EXPLOSION-PROOF VENTILATION. KEEP MATERIAL DRY.

THIS PRODUCT CONTAINS BERYLLIUM AND COPPER. INHALING BERYLLIUM DUST OR FUMES MAY CAUSE CHRONIC BERYLLIUM DISEASE (CBD), A SERIOUS CHRONIC LUNG DISEASE IN SOME INDIVIDUALS. BERYLLIUM IS A CANCER HAZARD; OVER TIME CBD AND CANCER CAN BE FATAL. TARGET ORGAN IS PRIMARILY THE LUNG. INHALING LARGE AMOUNTS OF COPPER, MAGNESIUM OXIDE, MANGANESE OXIDE, AND ZINC OXIDE FUMES OR DUST MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS. CHRONIC OVEREXPOSURE TO COPPER MAY CAUSE THICKENING OF THE SKIN; AND SKIN, TEETH, AND HAIR DISCOLORATION. CHRONIC OVEREXPOSURE TO MANGANESE DUST CAN CAUSE CENTRAL NERVOUS SYSTEM DAMAGE, SCARRING OF THE LUNGS AND REPRODUCTIVE HARM IN MALES. TARGET ORGAN IS PRIMARILY THE LUNG, BUT REPEATED HIGH EXPOSURE CAN ALSO AFFECT THE LIVER. CHRONIC OVEREXPOSURE TO IRON OXIDE DUST/FUME MAY CAUSE LUNG SIDEROSIS. CHRONIC OVEREXPOSURE TO SILICON DUST CAN CAUSE CHRONIC BRONCHITIS. OVEREXPOSURE TO AMORPHOUS SILICA CAN CAUSE DRYING OF THE MUCOUS MEMBRANES OF THE EYES, NOSE, AND THROAT.

THIS PRODUCT ALSO CONTAINS NICKEL AND CHROMIUM COMPOUNDS. INHALATION OF NICKEL DUST OR FUME MAY RESULT IN INFLAMMATION OF THE RESPIRATORY TRACT AND CAUSE NASAL AND/OR LUNG CANCER. NICKEL HAS BEEN IDENTIFIED AS A POTENTIAL HUMAN CARCINOGEN. EXPOSURE TO CHROMIUM DUST OR FUMES MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS AND KIDNEY AND LIVER DAMAGE. UNDER HIGH TEMPERATURES, HEXAVALENT CHROMIUM MAY BE PRODUCED. IF IN THE INSOLUBLE FORM, IT IS A CONFIRMED HUMAN CARCINOGEN. (CALIFORNIA PROPOSITION 65).

IF COATED WITH OIL, MAY CAUSE SKIN IRRITATION/DERMATITIS BY CONTACT. WELDING FUME IS LISTED AS A POSSIBLE CARCINOGENIC TO HUMANS.

READ THE ALUMINIUM/ALUMINIUM ALLOYS MATERIAL SAFETY DATA SHEET (MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL.

* If processing or recycling produces particulate, use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding, grinding, abrasive sawing, sanding and polishing. Any activity which abrades the surface of this material can generate airborne particulate. Use appropriate NIOSH approved respiratory protection (P95; P100 for lead with, quantitative fit testing required) if exposures exceed the permissible limits.

* The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational exposures.

* Aluminum, in solid form and as contained in finished products presents no special health risk.

* Sold for manufacturing purposes only. This product can be recycled; contact your sales representative.

For additional information, call or write to Copper and Brass Sales, 22355 West Eleven Mile Road, Southfield, MI 48033, telephone 248-233-5600, or visit our web site @ www.copperandbrass.com.

ALUMINUM LABEL NO. 300-1056

ISSUED 10/01/2008

ADIYA BIRLA HINDALCO INDUSTRIES LIMITED



Jeevan Deep Building, 1 Prafulla Chandra Sen Sarani,
Kolkata-700071, India. Tel: +91-33-22402210
Fax: +91-33-21894808
Regd. Office Century Bhawan, Dr. Ambedkar Road, Worli,
Mumbai - 400 028, INDIA.

Page 1 of 2

Date: 20-SEP-13

NAME OF THE PARTY: HYERSON CANADA INC., 161 THE WEST HALL, TORONTO, ONTARIO M5C4V8, CANADA.,
PRODUCT: ALUMINIUM SHEET,
QTY (MT): 20.923
LC/NO. & DATE: 61687167 Dt. 20.08.2013
INVOICE NO: HSB/R/2014/72

COPY

THE TEST RESULTS OF THE SAMPLES DRAWN AND TESTED IN OUR LABORATORY ARE AS FOLLOWS :

QUALITY CERTIFICATE

SRNO	Package No	Alloy Temp	Yst Yd (MT)	Size (mm)	Coil Nos.	Cast No./Sent No.
1	717380184	AA5052, H32	1.487	3048 X 1219 X 2.29	H13HASH0805002	717380184
2	2D019280184	AA5052, H32	1.506	3048 X 1524 X 2.54	H13HASH0819010	2D019280184
3	3C53084	AA5052, H32	1.487	2438 X 1219 X 2.03	H13HASH0805017	3C53084
4	2D019280185	AA5052, H32	1.503	3048 X 1524 X 2.54	H13HASH0819010	2D019280185
5	3C53087	AA5052, H32	1.487	2438 X 1219 X 2.03	H13HASH0805017	3C53087
6	717380185	AA5052, H32	1.511	3048 X 1219 X 2.29	H13HASH0805002	717380185
7	717290384	AA5052, H32	1.488	3048 X 1219 X 2.29	H13HASH0805001	717290384
8	717290382	AA5052, H32	1.485	3048 X 1219 X 2.29	H13HASH0805001	717290382
9	2D0193A0182	AA5052, H32	1.47	3048 X 1524 X 2.54	H13HASH0819011	2D0193A0182
10	717380182	AA5052, H32	1.487	3048 X 1219 X 2.29	H13HASH0805002	717380182

CHEMICAL COMPOSITION (%)

Cast No	Si	Fe	Mn	Mg	Cu	Co	Cr	Ni	Al	Pb	V	Sn	Bi	Others	Rem. Alum.
1 717380184	.011	.216	.006	2.345	.001	0	0	.004	0	0	0	0	0	0	97.123
2 2D019280184	.133	.285	.041	2.413	.01	0	0	.02	0	0	0	0	0	0	96.687
3 3C53084	.2	.43	.137	2.6	.009	0	0	.012	0	0	0	0	0	0	96.399
4 2D019280185	.133	.285	.041	2.413	.01	0	0	.02	0	0	0	0	0	0	96.187
5 3C53087	.2	.43	.137	2.6	.009	0	0	.012	0	0	0	0	0	0	96.397
6 717380185	.091	.216	.006	2.345	.001	0	0	.006	0	0	0	0	0	0	97.123
7 717290384	.105	.262	.003	2.328	.001	0	0	.005	0	0	0	0	0	0	96.473
8 717290382	.105	.262	.003	2.328	.001	0	0	.006	0	0	0	0	0	0	96.471
9 2D0193A0182	.124	.261	.004	2.387	.016	0	0	.02	0	0	0	0	0	0	96.88
10 717380182	.091	.216	.006	2.345	.001	0	0	.006	0	0	0	0	0	0	97.123

MECHANICAL PROPERTIES

Cast No	UTS (Kg/mm2)	YS (Kg/mm2)	% Elongation	Bend Test
1 717380184	24.9	0	11.2	0 T Satisfactory
2 2D019280184	23.2	0	10.6	0 T Satisfactory
3 3C53084	22.9	0	9.5	0 T Satisfactory
4 2D019280185	23.2	0	10.6	0 T Satisfactory
5 3C53087	22.9	0	9.5	0 T Satisfactory
6 717380185	24.5	0	11.2	0 T Satisfactory
7 717290384	23.4	0	10.6	0 T Satisfactory
8 717290382	23.4	0	10.6	0 T Satisfactory
9 2D0193A0182	22.6	0	11.8	0 T Satisfactory
10 717380182	24.5	0	11.2	0 T Satisfactory

OTHER TESTS

Remarks:- (1) HYERSON PO NO.731670 (2) ISSUED BY THE MANUFACTURER.

FOR HINDALCO INDUSTRIES LIMITED
AUTHORIZED SIGNATORY

2/2

ADITYA BIRLA HINDALCO INDUSTRIES LIMITED



Jeevan Deep Building, 1 Prafulla Chandra Sen Sarani,
Kolkata-700071, India. Tel: 91-23-22602210
Fax: 491-93-22884888
Regd. Office: Century Bhawan, Dr. Annie Besant Road, Worli,
Mumbai - 400 028, INDIA.

Page 2 of 2

Date: 20-SEP-13

NAME OF THE PARTY : RYKESON CANADA INC., 161 THE WEST HALL, TORONTO, ONTARIO M5C1V8, CANADA.,
PRODUCT : ALUMINIUM SHEET.
QTY (MT) : 20.923
LC/PO & DATE : 64687167 DL. 20.08.2013
INVOICE NO : HRB/R/2014/72

COPY

QUALITY CERTIFICATE

SRNO	Package No	Alloy Temper	Net Wt (MT)	Size (mm)	Coil No.	Cust Po./Cont No.
11	3CS3086	AA5052, H32	1.486	2438 x 1219 x 2.03	H13HASH0805017	3CS3086
12	3CS2981	AA5052, H32	1.517	2438 x 1219 x 2.03	H13HASH0805018	3CS2981
13	2D019280182	AA5052, H32	1.503	3048 x 1524 x 2.54	H13HASH0819010	2D019280182
14	2D0193A0185	AA5052, H32	1.505	3048 x 1524 x 2.54	H13HASH0819011	2D0193A0185
Total-			20.923			

CHEMICAL COMPOSITION (%)

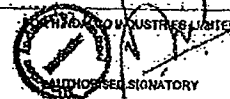
Cust No	Si	Fe	Mn	Pb	Cu	Zn	Cr	Al	Si	Fe	Pb	V	Sn	Al	Others	Rem. Alum.
11 3CS3086	.12	.45	.139	2.6	.005	0	0	.013	0	0	0	0	0	0	0	96.397
12 3CS2981	.12	.45	.137	2.6	.005	0	0	.013	0	0	0	0	0	0	0	96.387
13 2D019280182	.125	.785	.043	2.613	.01	0	0	.02	0	0	0	.005	0	0	0	96.887
14 2D0193A0185	.124	.301	.056	2.367	.016	0	0	.02	0	0	0	.005	0	0	0	96.88

MECHANICAL PROPERTIES

Cust No	YTS (Kg/cm2)	YS (Kg/cm2)	% Elongation	Read Test
11 3CS3086	22.9	0	9.8	0 T Satisfactory
12 3CS2981	22.4	0	10	0 T Satisfactory
13 2D019280182	23.2	0	10.6	0 T Satisfactory
14 2D0193A0185	22.6	0	11.8	0 T Satisfactory

OTHER TESTS

Remarks:- (1) RYKESON PO NO.736670 (2) ISSUED BY THE MANUFACTURER.





ESSAR STEEL ALGOMA INC., 105 West Street, Sault Ste. Marie, Ontario, Canada P6A 7B4

SO No., Item & Date.: 8017177 000020 2014/01/09	Shipment No. & Date.: 1000083594 2014/01/10	TC No., Date & Time : ESA-128192 2014/01/12 - 08:41:14
Sold to Customer Name and Address : RYERSON INC FINANCIAL DRIVE 7525 BRAMPTON, Ontario, Canada L6Y 5P4	Ship to Customer Name and Address: RYERSON INC FINANCIAL DRIVE 7525 BRAMPTON, Ontario, Canada L6Y 5P4	Customer PO NO./Item: 744335 / 2 BOL NO.: 1000083594 Cust. Part No.: 7804-2405 Carrier : NATIONAL TRANSPORTATION - 1158A
Customer Specification : CR STEEL SHEET Carbon CQ / CS ASTM A1008 CS TY B (2012) Mark Number 7804-2405 Batch Annealed Top Semi Critical Surface Improved Shape Pickled Light Oiled Light Matte Finish Edge Sealant Required Std Thickness Tol		

Supplementary Instructions : Test Cert 1:905-792-1617

Insp T/R : Chemical Analysis

Cust Use : AUTO IMPROVED SHAPE & SURF

ESSAR STEEL ALGOMA INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN. ALL RESULTS ARE RETAINED IN ACCORDANCE WITH THE COMPANY'S STANDARD RECORD KEEPING PRACTICES. THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ESSAR STEEL ALGOMA INC. IF YOU RECEIVE THIS DOCUMENT AND ARE NOT THE INTENDED RECEIVER, PLEASE CALL (705)945-4085 FOR INSTRUCTIONS ON METHOD OF DISPOSAL OF DOCUMENT.

MEETS EN 10204 3.1
ISO QUALITY AND ENVIRONMENTAL CERTIFICATES AVAILABLE AT WWW.ESSARSTEELALGOMA.COM

ALL HEATS FULLY KILLED.
HEATS INDICATED WITH (*) FINE GRAINED.
HEATS INDICATED WITH (+) MADE IN CANADA WITH DOMESTIC AND NORTH AMERICAN MATERIALS.

Dimensions (T x W x L)	Batch No.	Heat No.-MS	Quantity	Pcs
0.0440" x 48.000"	SAM9918B	3683T3-51	21,740 LB	1

CHEMICAL PROPERTIES													
Heat No. (wt%)	C	Mn	P	S	Si	Cr	Ni	Cu	Mo	Al	Nb	V	B
3683T3*	0.04	0.26	0.003	0.007	0.020	0.01	0.01	0.01	0.00	0.035	0.000	0.000	0.0000
													0.0001
													0.0033

K. UGHADPAGA
MANAGER METALLURGICAL SERVICES

****WARNING**** THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL.

Date: 2014/01/12 Time: 08:41:14 Page no: 1 of 1

PO/Rel

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by:

Attn: RICK

PART NO.

产品质量证明书 MATERIAL TEST CERTIFICATE

无锡宝昌金属制品有限公司
Wuxi Baichang Metal Products Co., Ltd.

PAGE 2 OF 2

单号: EX13093010S
Order No.
货方: GLOBAL STAINLESS STEEL INC.
用方: GLOBAL STAINLESS STEEL INC.
ONSIGNEE

品名: STAINLESS STEEL SHEETS,
Commodity SLIT EDGE

标准: ASTM A240/A240M
Specification

牌号: 304
Type
表面加工: 2B
Surface Finish

编号: EX1309301
Invoice No.
发行日期: 2013-10-26
Date

ONSIGNEE											Specification											化学成分										
序号 No.	货物编号 Product No.	产品尺寸 Product Size			数量 Number	重量 Weight Kg	拉伸试验 Tensile Test			表面硬度 Hardness HRB	炉批号 HEAT NO.	Chemical Composition (%)																				
		厚度 Thickness MM	宽度 Width MM	长度 Length MM			屈服强度 0.2% YS N/mm ²	抗拉强度 TS N/mm ²	延伸率 EL %			C	Si	Mn	P	S	Ni	Cr	N													
12	13102612	0.6096	1219.2	2438.4	118	1612	250	690	57	83	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400													
13	13102613	0.6096	1219.2	2438.4	118	1616	250	690	57	83	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400													
14	13102614	0.7620	1219.2	2438.4	88	1644	271	665	58	89.5	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400													
15	13102615	0.7620	1219.2	2438.4	87	1626	271	665	58	89.5	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400													
16	13102616	1.2192	1219.2	2438.4	54	1494	267	695	55	87	A1303987	0.0400	0.530	1.1000	0.0330	0.0010	8.0200	18.160	0.0400													
17	13102617	1.2192	1219.2	2438.4	50	1378	267	695	55	87	A1303987	0.0400	0.530	1.1000	0.0330	0.0010	8.0200	18.160	0.0400													
18	13102618	1.2192	1219.2	3048	42	1460	267	695	55	87	A1303987	0.0400	0.530	1.1000	0.0330	0.0010	8.0200	18.160	0.0400													
19	13102619	1.2192	1219.2	3048	45	1574	267	695	55	87	A1303988	0.0400	0.430	1.1300	0.0380	0.0010	8.0300	18.230	0.0300													
20	13102620	1.5240	1219.2	2438.4	43	1485	271	680	52	87	A1303988	0.0400	0.430	1.1300	0.0380	0.0010	8.0300	18.230	0.0300													
21	13102621	1.5240	1219.2	2438.4	43	1487	271	680	52	87	A1303988	0.0400	0.430	1.1300	0.0380	0.0010	8.0300	18.230	0.0300													
22	13102622	1.9050	1219.2	2438.4	40	1725	268	650	53	84	A2304006	0.0300	0.440	1.1500	0.0380	0.0010	8.1000	18.250	0.0400													
23	13102623	1.9050	1219.2	2438.4	41	1755	268	650	53	84	A2304006	0.0300	0.440	1.1500	0.0380	0.0010	8.1000	18.250	0.0400													
24	13102624	3.0480	1219.2	3048	17	1482	280	675	54	84	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400													
25	13102625	3.0480	1219.2	3048	19	1656	280	675	54	84	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400													

技术本部
TECHNICAL DEPT

备注 (Remarks):

1. 尺寸和表面: 合格
Size and Surface: Guaranteed

兹证明所列产品均符合订单和标准的制造要求

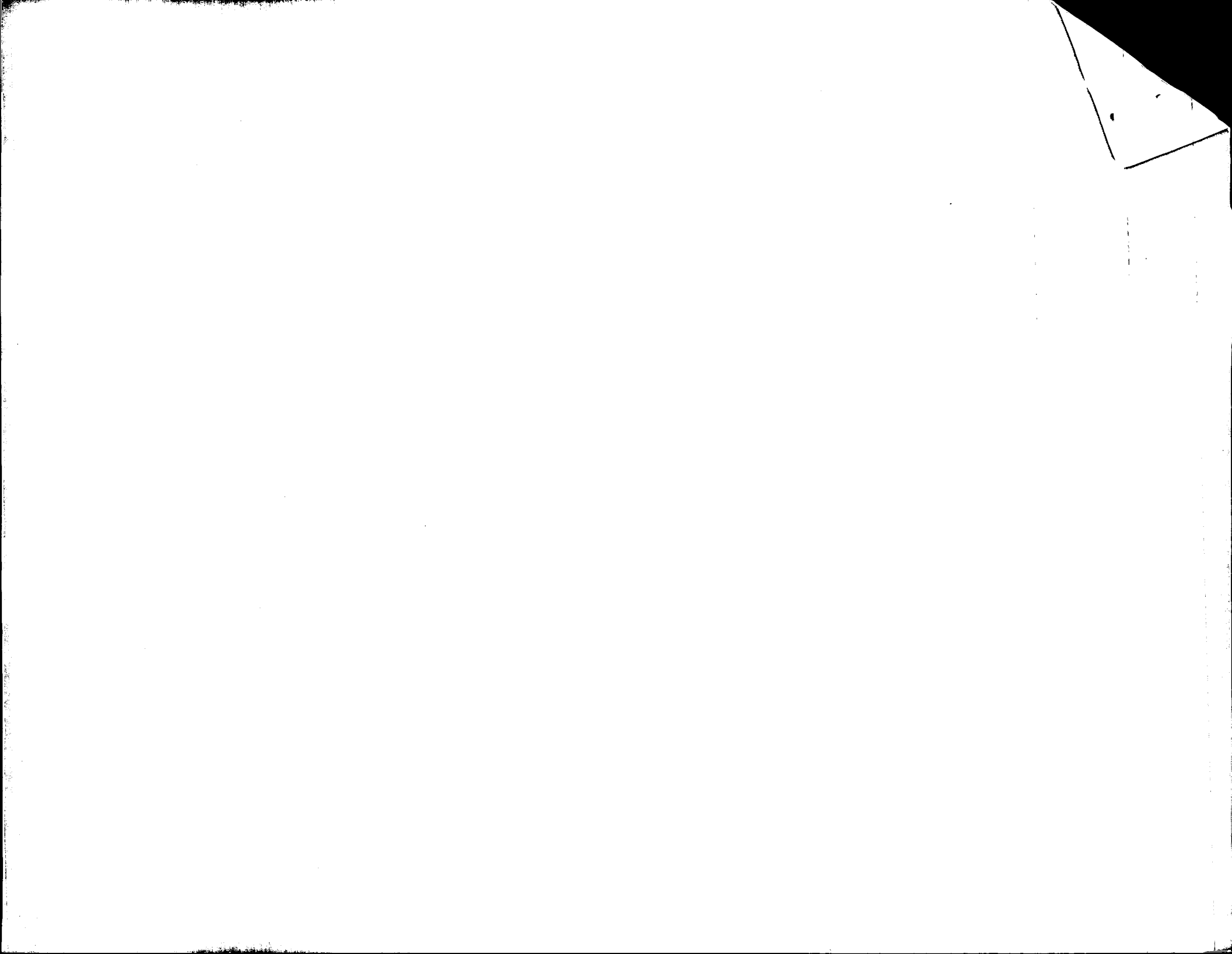
WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE ORDER AND SPECIFICATION

*此报告仅可完全复制

*The report can only be copied completely

技术本部
TECHNICAL DEPT.

无锡宝昌金属制品有限公司
WUXI BAICHANG METAL PRODUCTS CO., LTD.



THYSSENKRUPP MATERIALS NA

Certificate of Mill Test Results

PO/Rel

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by: _____

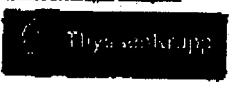
BL PEC-000000-000

Pg 1/1

PART NO.

Attn: RICK

1846

 ThyssenKrupp Stainless USA		INSPECTION CERTIFICATE CERTIFICADO DE INSPECCION ABWABHREPRUEBAS according to / de acuerdo con French EN 10204-3.1		Inspection number / Nº de inspección / 0000032224 / Page / Pages / Folios 1 / 1	
1 ThyssenKrupp Drive, P.O. Box 13000, Canal, AL 36513-1305 OLBERT METALS SALES LIMITED 988 DERRY ROAD EAST SUITE 306 MIRISSAUBA ON L5T 2J8 CANADA			Customer/Client / Cliente / Representante OLBERT METALS SALES LIMITED, MISSISSAUGA Customer's city / Address / P.O. de Public Client / Representante 7D-1846 Material's application / Nº de Public Client / Representante 901147789 / 001 Delivery name no. / Nº de entrega / Livraison 9032222 / 010 Product / Fabrica / Design SHEET/NO.1A5/BLUCH Steel grade and quality / Acero / Fabrica and description TYPE 304L/304		
From / delivery / Condition / Design / Livraison ASTM A3040000L, ASME SA-240 E&R Part A E&R 2010 ASTM A3040000L, ASME SA-240 E&R Part A E&R 2010			Customer's material no. / Nº de material / 304L/304		
Product description / Design / Condition / Description / Design / Condition / 3.06 inch x 1.21928 mm x 2.43840 mm 0.1200 inch x 0.0080 inch x 0.0000 inch			Production procedure / Production / ADD		
Weight / Weight / Weight / 4,800 lb / 2,178 kg 4,800 lb / 2,178 kg			Weight / Weight / Weight / 71000 71000		
Weight / Weight / Weight / 8,775 lb / 4,034 kg			Weight / Weight / Weight / 1000000000 1000000000		
Chemical composition / Composition / Composition / % C % Si % Mn % P % S % Cr % Ni % N 0.028 0.30 1.66 0.027 0.0018 18.05 8.00 0.080			Transverse TRANSVERSE		
Tensile strength / Tensile strength / Y80.5% T8 6.41% H88 PSI / MPa PSI / MPa %			Tensile strength / Tensile strength / 1000000000 45,400 / 302 81,113 / 642 98.6 32 1000000000 45,400 / 302 81,113 / 642 98.1 32		
Dimensions / Dimensions / Dimensions / EN 10204-3.1			Dimensions / Dimensions / Dimensions / OK		
No weld repairs No intentional addition of Mercury compounds were made or used Free of radioactive contamination EU RoHS Directive 2002/95/EC Compliant Country of Heat no per ISO 15005-1			The information provided is a true copy of that on file / Les renseignements fournis sont une copie exacte de ceux en fichier / The information provided is a true copy of that on file / Les renseignements fournis sont une copie exacte de ceux en fichier / Andrew Polanco Phone: +1 381 520 3402 Director of Sales / Directeur des ventes / Directeur des ventes /		
ThyssenKrupp Stainless USA, LLC An ISO 9001:2008 certified company			Date of delivery / Date of delivery / 03/12/2012		

